Session 20: Post Class tests

1. When you use a real options argument to value an asset that you have already valued using a discounted cash flow model, which of the following will you expect to see as your real option value?
    a. A value equal to that of the DCF value
    b. A value greater than the DCF value
    c. A value less than the DCF value
2. Which of the following payoff features best characterizes buying a call option?
    a. Limited losses, potentially unlimited profits
    b. Potentially unlimited losses, limited profits
    c. Limited losses, limited profits
    d. Potentially unlimited losses and profits
3. For an investment to be valued as a real option, which of the following would you need as requirements?
    a. An underlying asset whose value changes
    b. A payoff that is contingent on the underlying asset's value change
    c. A limited life for the investment
    d. All of the above
4. An option gives the buyer the right to buy (call) or sell (put) an asset at a fixed price. As the underlying asset becomes more volatile, which of the following will happen to your option values (holding all else constant).
    a. Call options will become more valuable & put options less.
    b. Call options will become less valuable & put options more.
    c. Both call & put options will become more valuable
    d. Both call & put options will become less valuable
    e. Call and put options will be unaffected in value
5. The essence of real options is that you learn from what is happening around you and adapt your behavior based upon what you learn. You can capture this in an option pricing model but you can also capture it using decision trees.
    a. True
    b. False

Session 20: Post Class Test Answers

1. **b. A value greater than the DCF value.** If an option exists in an asset, the DCF valuation of that asset will not capture the optionality and a premium has to be added on to that value.
2. **a. Limited losses, potentially unlimited profits.** The key to option payoffs is that the buyer of an option can never lose more than what he or she paid for the option and hence has limited losses. At least with call options, since the stock price can keep rising without a bond, you have unlimited profits.
3. **d. All of the above.** An option needs an underlying asset with a variable price, a payoff contingent on that price and a limited life.
4. **c. Both call and put options will become more valuable.** Since your losses are limited on all options (calls and puts), increased risk/volatility in the underlying asset can only help you and increase value.
5. **a. True.** A correctly constructed decision tree, with discount rates that vary depending on where you are in the tree and probabilities attached to each branch should deliver the same value as the option model.

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